

PNS SCHOOL OF ENGINEERING & TECHNOLOGY, MARSHAGHAI, KENDRAPARA	
<u>LESSON PLAN</u>	
DISCIPLINE-MECHANICAL, SEMESTER-4TH, SUBJECT-TOM(TH-I)	
NAME OF THE FACULTY-ER. RAMESH CHANDRA PRADHAN	
NO. OF HOURS ALLOTTED per WEEK-4.5      NO. OF WEEKS REQUIRED-10	
1ST	CHAPTER-1 Simple mechanism: Link, kinematic pair and types (Lower pair and higher pair)
2ND	kinematic chain, mechanism, Inversion
3rd	four bar link mechanism and its inversion
4th	Cams and Followers: Concept; Definition and application of Cams and Followers;
5th	Classification of Cams and Followers
6th	Different follower motions and their displacement diagrams like uniform velocity
7th	Different follower motions and their displacement diagrams like SHM, uniform acceleration and Retardation;
8th	CHAPTER-2 Power Transmission: Types of Drives – Belt, Chain, Rope, Gear drives & their comparison
9th	; Belt Drives - flat belt, V-belt & its applications
10th	Material for flat and V-belt; Angle of lap, Belt length. Slip
11th	Creep; Determination of Velocity Ratio, Ratio of tight side and slack side tension
12th	; Centrifugal tension and Initial tension; Condition for maximum power transmission
13th	NUMERICALS SOLVED
14th	Chain Drives – Advantages & Disadvantages; Selection of Chain & Sprocket wheels; Methods OF lubrication
15th	Gear Drives – Spur gear terminology; Types of gears and gear trains, their selection for different applications
16th	; Train value & Velocity ratio for compound, reverted and simple epicyclic gear train; Methods of lubrication; Law of gearing
17th	Rope Drives – Types, applications, advantages & limitations of Steel ropes
18th	NUMERICALS SOLVED
19th	CHAPTER-3 Flywheel and Governors: Flywheel - Concept,
20th	function and application of flywheel USING I engine
21st	; Coefficient of fluctuation of energy, Coefficient of fluctuation of speed and its significance
22nd	Governors - Types and explanation with neat sketches
23rd	Centrifugal GOVERNOR

24th	Watt and Porter GOVERNOR
25th	Concept, function and applications & Terminology of Governors (sensitivity, stability
26th	;Concept, function and applications & Terminology of Governors (sensitivity, stability
27th	Simple numerical on Watt and Porter Governor.
28th	Comparison between Flywheel and Governor
29th	CHAPTER-4 Brakes, Dynamometers, Clutches & Bearings: Function of brakes and dynamometers; Types of brakes and Dynamometers;
30th	; Comparison between brakes and dynamometers
31st	Construction and working of i) shoe brake
32nd	Construction and working of ii) Band brake
33rd	NUMERICALS SOLVED
34th	Concept of Self Locking & Self energizing brakes
35th	Construction and working of i) Rope Brake Dynamometer, ii) Hydraulic Dynamomete
36th	Clutches- Uniform pressure and Uniform Wear theories; Function of Clutch and its application; Construction and working of i) Single plate clutch, ii) Multiplate clutch,
37th	iii) Centrifugal Clutch iv) Cone clutch and v) Diaphragm clutch
38th	Bearings – i) Simple Pivot, ii) Collar Bearing, iii) Conical pivot. Torque & power lost in friction (no derivation). Simple numerical.
39th	CHAPTER-5 Balancing & Vibrations: Concept of balancing
40th	; Balancing of single rotating mass;
41st	Graphical method for balancing of several masses revolving in same plane;
42nd	Concept and terminology used in vibrations.
43rd	, Causes of vibrations in machines;
44th	harmful effects and remedies.
45th	NUMERICALS SOLVED

Signature of Lecturer

Signature of H.O.D

**HEAD OF THE DEPARTMENT**  
Department of Mechanical Engineering  
PNS School of Engg. & Tech.

Signature of Principal

**PRINCIPAL**  
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